Geographic Review Panel 4 – San Joaquin River

Proposal number: 2001-K202 **Short Proposal Title:** Use of Delta for Rearing by Central Valley Chinook salmon

1. Applicability to CALFED ERP Goals and Implementation Plan and CVPIA priorities, and relevance to ERP and CVPIA priorities for your region. This project could help address one of the 12 ecological uncertainties in CALFED's Strategic Plan and is consistent with a CVPIA monitoring objective to obtain additional population information that can be used to assess the efficacy of management and restoration actions. Streams throughout the Central Valley, including the San Joaquin tributaries, often produce a large proportion of the juvenile salmon production that leave the system as fry soon after emergence. The fundamental questions for resource managers and restoration biologists are 1) what is the fate of these fish once they leave the tributary and how does this relate to adult production; and 2) what factors cause them to leave the tributaries (i.e., is it environmentally based such as habitat condition or quantity or deterministic, or is it genetic?). This proposal primarily addresses the first question through a series of sub-objectives. This is a very important question with associated hypothesis that is important to test, and that could ultimately have a large influence on Delta restoration objectives and water management in the tributaries.

2. Linkages/coordination with previously funded projects or other restoration activities in your region. As mentioned above, the early fall-run chinook salmon fry emigration pattern is often observed from the San Joaquin River tributaries. Currently, we do not understand the importance of this life history trait in relation to survival to adulthood. At present, mainstem San Joaquin River flows are primarily managed for outmigrating smolts however, this could possibly change depending on the success of the fish that outmigrate as fry.

3. Feasibility, especially the project's ability to move forward in a timely and successful manner. Juvenile and adult sample collection and reading otolith patterns on a relatively fine temporal scale should be doable. However, the TARP felt that some aspects of the proposal were not well justified, primarily that fish from different natal streams could be distinguished based on the signal from daily growth patterns. This study proposes 3 years of juvenile and adult otolith collection. Juvenile samples will be used as annual references to distinguish how otolith patterns vary in space, or within the same space over time. However, it is not clear if these patterns vary much from year to year, and if so the investigation may be limited. The project would only have 1 or 2 years of data where adults that return will be from the same cohort as the juveniles sampled for reference.

4. Qualifications of the applicants and others involved in implementing the proposed project. The team has done some initial pilot level work related to the questions that they propose to address with this proposal. However, from the proposal there is not a lot of supporting information from that work shared to know how extensive the evaluations and investigations were. The Panel is aware that this team is qualified.

5. Local involvement (including environmental compliance). Local involvement is not important for this type of research project. This is the sort of project that requires good interagency connections and coordination, which based on this research groups long standing participation in IEP should not be a problem.

6. Cost. Budget is not detailed but costs appear to be reasonable.

7. Cost sharing. The applicant is contributing a total of $16,000 of matching funds and $134,000 of in-kind contribution which constitutes roughly 30% of the request.

8. Additional comments. The questions to be addressed are of Central Valley-wide importance. The TARP questioned whether some of the questions posed could be addressed. They gave more credence to addressing the fundamental question of how well do salmon fry and juveniles that rear in the Delta fare to adulthood when compared to fish that primarily use the Delta as a migration corridor. Questions related to distinguishing tributary origin based on otolith growth patterns and what fraction of each salmon race rears in the Delta may be beyond the scope of this project. Ideally, it would be good to further expand pilot studies that the team has already begun on the systems they have done the work on. Once this expanded focus is tested and validity of the results are in, then possibly consider expanding the geographic scope. Alternatively, the San Joaquin could be a good place to attempt to answer some of the questions that are being posed. The San Joaquin is good in that you could focus on one race and three tributaries. Also, there is a fairly good seasonal sampling effort via seine and rotary screw traps at multiple locations along each river. However, the potential homogeneity of environmental conditions within the basin may be less desirable.

Regional Ranking

Panel Ranking: Medium (or medium high, see below)

Provide a brief explanation of your ranking: This panel gives the proposal a medium as is because of some of the technical concerns combined with the relative importance of the questions attempting to be addressed. However, if there is a way to scale the proposal back so that there is more of an incremental test of questions and feasibility before going for the whole Central Valley, then the panel recommends a rating of medium high. The proposal could start to answer some very basic and important questions related to salmon ecology with in the Central Valley system. This proposal may be of higher regional importance in areas where the team already has experience with otolith sampling and reading and has begun to establish a database.